TABLE OF CONTENTS

VOLUME 66, 1983

January [1]

***Journal*, pp. 1–82**

1. Polymorphism and Hydration of Tricalcium Silicate Doped with ZnO ☆ Ivan Odler and Samir Adbul-Maula 1
2. Influence of a Tangential Force on the Fracture of Two Contacting Elastic Bodies ☆ Shu-Sheng Chiang and Anthony G. Evans 4
3. Formation of Ultrafine Tetragonal ZrO_2 Powder Under Hydrothermal Conditions ☆ Eiji Tani, Masahiro Yoshimura, and Shigeyuki Sōmiya 11
4. Microstructure and Grain-Boundary Composition of Hot-Pressed Silicon Nitride With Yttria and Alumina ☆ Channing C. Ahn and Gareth Thomas 14
5. Processing Ternary Sulfide Ceramics: Powder Preparation, Sintering, and Hot-Pressing ☆ Daniel L. Chess, Catherine A. Chess, James V. Biggers, and William B. White 18
6. Subsolidus Phase Equilibria and Ordering in the System ZrO_2-Y_2O_3 ☆ Carmen Pascual and Pedro Durán 23
7. Rhombohedral Twinning in Alumina ☆ William D. Scott and K. K. Orr 27
8. Thermal Expansion of Substituted Copper Aluminosilicate Glasses ☆ Kazumasa Matusita, Sumio Sakka, and Tomoshi Shouji 33
9. A Biaxial-Flexure Test for Evaluating Ceramic Strengths ☆ D. K. Shetty, A. R. Rosenfield, W. H. Duckworth, and P. R. Held 36
10. Electrical Conduction in $Co_{1-x}Mg_xO$ ☆ Kunihito Koumoto, Keiko Yamayoshi, and Hiroaki Yanagida 42
11. Double-Cantilever-Beam Testing of a Transversely Isotropic Fibrous Silica Material ☆ David J. Green, Christopher A. Hawkins, and Margaret M. Hirlinger 46
12. Ionic Transference Numbers and Electrical Conduction in $MgAl_2O_4$ Spinel ☆ Edward Sonder 50
13. Effect of ΔT- and Spatially Varying Heat Transfer Coefficient on Thermal Stress Resistance of Brittle Ceramics Measured by the Quenching Method ☆ T. Ozyener, K. Satyamurthy, Charles Eugene Knight, Jitendra P. Singh, D. P. H. Hasselman, and G. Ziegler 53
14. Viscoelastic Analysis of Thermal Stresses in a Composite Sphere ☆ George W. Scherer 59
15. $Ba_2Ti_9O_{20}$ Phase Equilibria ☆ Henry M. O'Bryan and John Thomson 66
16. NMR Study of Adsorbate Self-Diffusion in Porous Glasses ☆ Jörg Kärger, Jörg Lenzner, Harry Pfeifer, Hartmut Schwabe, Wolfgang Heyer, Frank Janowski, Friedrich Wolf, and Sergej Petrovic Ždanov 69
17. Neutron Scattering Studies of Vitrified Radioactive Waste ☆ Roger N. Sinclair, J. A. Erwin Desa, and Adrian C. Wright 72
18. Structural Rearrangement During the Sintering of MgO ☆ J. A. Varela and O. J. Whittemore 77

***Communications*, pp. C-1–C-14**

Effect of Microstructure on the Properties of TiB_2 Ceramics ☆ Matt K. Ferber, Paul F. Becher, and Cabell B. Finch C-2
Fracture Toughness Predictions for Crack Bowing in Brittle Particulate Composites ☆ David J. Green C-4
Microstructural Characterization of Graded-Index Antireflective Films ☆ Stephen C. Danforth and John S. Haggerty C-6
Formation of β-Si_3N_4 Coatings by Chemical Vapor Deposition ☆ Kiichi Oda, Tetsuo Yoshio, and Kazuo O-Oka C-8
Cracking Branching in Ceramic Disks Subjected to Biaxial Flexure ☆ D. K. Shetty, A. R. Rosenfield, and W. H. Duckworth C-10
A Liquid Silazane Precursor To Silicon Nitride ☆ Dietmar Seyferth, Gary H. Wiseman, and Christian Prud'homme C-13

February [2]

***Journal*, pp. 83–158**

19. Physics of Fracture ☆ Brian R. Lawn 83
20. A Comparison of Reducing and Oxidizing Heat Treatments of Hot-Pressed Silicon Nitride ☆ D. R. Clarke 92
21. Glass Formation, a Contemporary View ☆ D. R. Uhlmann 95
22. Phase Relations and Ordering in the System Erbia-Hafnia ☆ Pedro Duran, Carmen Pascual, Jean-Pierre Coutures, and Samuel R. Skaggs 101
23. Application of the J Concept to Alumina at High Temperatures ☆ K. Kromp and R. F. Pabst 106
24. Calcium Segregation to a Magnesium Oxide (100) Surface ☆ Robert C. McCune and Paul Wynblatt 111
25. Infrared Spectra of Rapidly Quenched Glasses in the Systems Li_2O-RO-Nb_2O_5 (R = Ba, Ca, Mg) ☆ Masahiro Tatsumisago, Akira Hamada, Tsutomu Minami, and Masami Tanaka 117
26. Effect of Heat Treatment on the Na^+ Resistivity of Vitreous Silica ☆ Kim Papadopoulos, Douglas M. Mattox, and Thomas T. Meek 120
27. Twin Boundaries in Monoclinic ZrO_2 Particles Confined in a Mullite Matrix ☆ Ewald Bischoff and Manfred Rühle 123
28. Controlled Flaws in Ceramics: A Comparison of Knoop and Vickers Indentation ☆ David B. Marshall 127
29. Elevation of Liquidus Temperature in a Gel-Derived Na_2O-SiO_2 Glass ☆ Michael C. Weinberg and George F. Neilson 132
30. Viscoelastic Analysis of the Split Ring Seal ☆ George W. Scherer 135
31. Effect of Doping Simultaneously with Iron and Titanium on the Diffusional Creep of Polycrystalline Al_2O_3 ☆ Yasuro Ikuma and Ronald S. Gordon 139

32. Hydrothermal Oxidation of Hf Metal Chips in the Preparation of Monoclinic HfO_2 Powders ☆ Hideo Toraya, Masahiro Yoshimura, and Shigeyuki Sōmiya ... 148
33. Dynamic Fracture Toughnesses of Reaction-Bonded Silicon Nitride ☆ Albert S. Kobayashi, Ashley F. Emery, and Been Ming Liaw ... 151
34. High-Temperature Environmental Strength Degradation of a Hot-Pressed Silicon Nitride: An Experimental Test ☆ D. R. Clarke ... 156

***Communications*, pp. C-15–C-34**

Determination of Residual Surface Stresses Caused by Grinding in Polycrystalline Al_2O_3 ☆ Fred F. Lange, Michael R. James, and David J. Green ... C-16
Investigation of the Phase Transition in $ZrTiO_4$ and $ZrTiC_4$-SnO_2 Solids Solutions ☆ Anna E. McHale and Robert S. Roth ... C-18
Densification of Calcia-Stabilized Zirconia with Borates ☆ Relva C. Buchanan and Anup Sircar ... C-20
Conductivity of Strongly Reduced and Quenched Ceramic La-Doped $SrTiO_3$ ☆ Bruce Odekirk, U. Balachandran, N. G. Eror, and J. S. Blakemore ... C-22
Microstructure in Hydrated Silicate Glasses ☆ Minoru Tomozawa and Steven Capella ... C-24
Microstructure and Deterioration in Steatite Ceramics ☆ Prasanta Nandi and Vemuri C. S. Prasad ... C-26
Comparison of K_{Ic} Values for Al_2O_3-ZrO_2 Composites Obtained from Notched-Beam and Indentation Strength Techniques ☆ Michael V. Swain and Nils Claussen ... C-27
Efficiency Improvement in Thermophoretic Deposition ☆ Michael C. Weinberg ... C-30
Static Fatigue of Preoxidized Hot-Pressed Silicon Nitride ☆ George D. Quinn and Lewis Swank ... C-31
Comment on "Liquid-Phase Sintering: Are Liquids Squeezed Out from Between Compressed Particles?" ☆ Vitomir Smolej ... C-33
Reply ☆ Fred F. Lange ... C-33

March [3]

***Journal*, pp. 159–232**

35. Crack-Propagation Rates in β''-Alumina ☆ Lakshminarayan Viswanathan and Anil V. Virkar ... 159
36. Infrared Study of Soda-Lime Glass During Hydration and Dehydration ☆ Blain H. Olbert and Robert H. Doremus ... 163
37. Kinetics of the β''-to-β Transformation in the System Na_2O-Al_2O_3 ☆ James D. Hodge ... 166
38. Effect of Iron on Waste-Glass Leaching ☆ Gary L. McVay and Charles Q. Buckwalter ... 170
39. Impurity Alkali Diffusion in Sodium-Cesium Silicate Glasses ☆ H. Jain and N. L. Peterson ... 174
40. Statistical Analysis of Bending Strengths for Brittle Solids: A Multiaxial Fracture Problem ☆ Jacques Lamon and Anthony G. Evans ... 177
41. Fracture-Surface Energy and Fracture Toughness of (U,Pu)C and (U,Pu)(C,O) ☆ Hansjoachim Matzke, Volker Meyritz, and Jules L. Routbort ... 183
42. Diffusion-Controlled Redox Kinetics in a Glassmelt ☆ Don S. Goldman and Prabhat K. Gupta ... 188
43. Grain-Boundary Diffusion of ^{51}Cr in MgO and Cr-Doped MgO ☆ John W. Osenbach and Vladimir S. Stubican ... 191
44. Role of Water Vapor in Crystallite Growth and Tetragonal-Monoclinic Phase Transformation of ZrO_2 ☆ Yoshio Murase and Etsuro Kato ... 196
45. Effect of Thermal History on the Properties of a Willemite Glass-Ceramic ☆ J. E. Shelby and M. C. Nichols ... 200
46. Oxidation Equilibrium of Iron in Borosilicate Glass ☆ Don S. Goldman ... 205
47. Behavior of Pores in the Sintering of Acicular Fe_2O_3 Powder ☆ Takashi Yamaguchi and Hideaki Kosha ... 210
48. Transmission Electron Microscopy of Annealed ZrO_2 + 8 Mol% Sc_2O_3 ☆ Farhad K. Moghadam, Tom Yamashita, Robert Sinclair, and David A. Stevenson ... 213
49. Synthesis and Characterization of a High-Purity AlN Powder ☆ Irvin C. Huseby ... 217
50. Heat-Resistant Nonsilicate Porous Glasslike Material ☆ Miloslav A. Res, S. Hart, and R. W. White ... 221
51. Thermal Expansion of Alkali Borate Glasses ☆ J. E. Shelby ... 225
52. Flaws Responsible for Slow Cracking in the Delayed Fracture of Alumina ☆ George Sines and Tatsuo Okada ... 228
Correction — Viscoelastic Analysis of Thermal Stresses in a Composite Sphere ☆ George W. Scherer ... 232

***Communications*, pp. C-35–C-56**

Effect of Cavities on Creep ☆ D. P. H. Hasselman and Anuradha Venkateswaran ... C-36
Positron Annihilation in Phase-Separated BaO-SiO_2 Glasses ☆ Edgar Dutra Zanotto ... C-37
Static Fatigue of Silica in Hermetic Environments ☆ J. A. Wysocki ... C-38
Effect of Hot-Pressing Temperature on the Thermal Diffusivity/Conductivity of SiC/AlN Composites ☆ Larry D. Bentsen, D. P. H. Hasselman, and Robert Ruh ... C-40
Optical Absorption and Oxidation States of Uranium in Alkali Aluminoborate Glasses ☆ Morsi M. Morsi, Salah El-Konsol, and Mohamed A. Adawi ... C-41
Electron Microscopy of Annealed (Ni,Zn,Co)Fe_2O_4 ☆ Martin P. Harmer, Raja K. Mishra, and Gareth Thomas ... C-44
Strength of Proof-Tested Optical Fibers ☆ Shigeki Sakaguchi and Motohiro Nakahara ... C-46
Elastic Properties of Hafnium and Zirconium Oxides Stabilized with Praseodymium or Terbium Oxide ☆ Stephen L. Dole and Orville Hunter, Jr. ... C-47
Transformation Strengthening of β''-Al_2O_3 with Tetragonal ZrO_2 ☆ Fred F. Lange, Burt I. Davis, and Douglas O. Raleigh ... C-50
Shear Moduli of Composites with Elliptical Inclusions ☆ Richard C. Stiffler and D. P. H. Hasselman ... C-52
Effect of High-Temperature Exposure in Air on Strength of Hot-Pressed Silicon Nitride ☆ John E. Ritter, Jr., Karl Jakus, Lucius A. Strazdis, and Wayne P. Rogers ... C-53
Microhardness and Transparency of an La-Si-O-N Oxynitride Glass ☆ Akio Makishima, Mamoru Mitomo, Nobuo Ii, and Masayuki Tsutsumi ... C-55

April [4]

***Journal*, pp. 233–310**

53. Kinetics of Crystallization of ZrF_4-BaF_2-LaF_3 Glass by Differential Scanning Calorimetry ☆ Narottam P. Bansal, Robert H. Doremus, Allan J. Bruce, and C. T. Moynihan 233
54. Field-Property Bounds for Porous Sintered Ceramics ☆ Panajotis Nikolopoulos and Gerhard Ondracek 238
55. Role of Sodium Citrate in Aqueous Milling of Aluminum Oxide ☆ Michael D. Sacks and Tseung-Yuen Tseng 242
56. Electronic Conductivity, Seebeck Coefficient, and Defect Structure of $La_{1-x}Sr_xFeO_3 (x = 0.1, 0.25)$ ☆ Junichiro Mizusaki, Tadashi Sasamoto, W. Roger Cannon, and H. Kent Bowen 247
57. Sintering of PZT Ceramics: I, Atmosphere Control ☆ Angus I. Kingon and J. Brian Clark 253
58. Sintering of PZT Ceramics: II, Effect of PbO Content on Densification Kinetics ☆ Angus I. Kingon and J. Brian Clark 256
59. Stable and Metastable Phase Relations in the System ZrO_2-CaO ☆ John R. Hellmann and Vladimir S. Stubican 260
60. Phase Relations and Ordering in the Systems MgO-Y_2O_3-ZrO_2 and CaO-MgO-ZrO_2 ☆ John R. Hellmann and Vladimir S. Stubican 265
61. Crystal Structure of the Microwave Dielectric Resonator $Ba_2Ti_9O_{20}$ ☆ Ekkehart Tillmanns, Wolfgang Hofmeister, and Werner H. Baur 268
62. Investigation of Phase Stability in the System SiC-AlN ☆ William Rafaniello, Mark R. Plichta, and Anil V. Virkar 272
63. Effect of Indenter Geometry on Controlled-Surface-Flaw Fracture Toughness ☆ John J. Petrovic 277
64. A Molecular Mechanism for Stress Corrosion in Vitreous Silica ☆ Terry A. Michalske and Stephen W. Freiman 284
65. Fracture Toughness/Young's Modulus Correlation for Low-Density Fibrous Silica Bodies ☆ David J. Green 288
66. Relation of Load to Radial Crack Length for Spherical Indentations in Hot-Pressed ZnS ☆ Henry P. Kirchner and John A. Ragosta 293
67. Specific Volume Diagrams for Ceramic Processing ☆ George Y. Onoda, Jr. 297
68. Development of Porous Antireflective Films on Borosilicate Glasses ☆ Asif Iqbal, Stephen C. Danforth, and John S. Haggerty 302
69. Effect of Sodium Carbonate on the Hydration of Tricalcium Silicate ☆ N. B. Singh and Km. Abha 308

***Communications*, pp. C-57–C-74**

Mechanical Properties of Sintered and Nitrided Laser-Synthesized Silicon Powder ☆ Stephen C. Danforth and John S. Haggerty C-58
Oxygen Self-Diffusion in MgO Single Crystals ☆ Yasumichi Oishi, Ken Ando, Hiroshi Kurokawa, and Yoji Hiro C-60
Effect of Gamma Radiation on the Direct-Current Resistivity of GeO_2 ☆ Robert H. Magruder III, Donald L. Kinser, and Robert A. Weeks C-62
Effect of Aluminum Content on Infrared Characteristics of BaF_2/ThF_4-Containing Glasses ☆ Bernard Bendow, Pranab K. Banerjee, Martin G. Drexhage, Osama H. El-Bayoumi, Shashanka S. Mitra, Cornelius T. Moynihan, David Gavin, Giles Fonteneau, Jacques Lucas, and Marcel Poulain C-64
Preparation of Germanate Glass by Vapor-Phase Axial Deposition ☆ Hiroshi Takahashi and Iwane Sugimoto C-66
X-Ray Diffraction Studies of Thermally Shocked Periclase ☆ Ramaswami Vasudevan, Hartmut Schneider, and Aleksander Majdic C-68
Silicon-Free Oxynitride Glasses Via Nitridation of Aluminate Glassmelts ☆ Larry M. Bagaasen and Subhash H. Risbud C-69
Raman Spectra of Potassium Borogermanate Glasses with High B_2O_3 Contents ☆ Indra N. Chakraborty and Robert A. Condrate, Sr. C-71
Comment on "Toughening of Glasses by Metallic Particles" ☆ Stephanie C. Kunz C-73
Reply ☆ Vladimir Krstic and Patrick S. Nicholson C-74

May [5]

***Journal*, pp. 311–388**

70. Gamma Radiation Effects on the Strength of a Borosilicate Glass ☆ W. A. Zdaniewski, T. E. Easler, and R. C. Bradt 311
71. Theory of Fatigue for Brittle Flaws Originating from Residual Stress Concentrations ☆ Edwin R. Fuller, Brian R. Lawn, and Robert F. Cook 314
72. Characterization of Flux-Grown $Ca(WO_4)_x(MoO_4)_{1-x}$ Crystals ☆ S. K. Arora, R. S. Godbole, and G. S. Trivikrama Rao 321
73. Melt Processing and Properties of Barium-Sialon Glasses ☆ William K. Tredway and Subhash H. Risbud 324
74. Toughening by Monoclinic Zirconia ☆ H. Ruf and Anthony G. Evans 328
75. Multicomponent Glasses of GeO_2 and Sb_2O_3 with Bi_2O_3, Tl_2O, and/or PbO ☆ Kurt Nassau and Dana L. Chadwick 332
76. Determination of Threshold Stress Intensity for Crack Growth at High Temperature in Silicon Carbide Ceramics ☆ Eric J. Minford and Richard E. Tressler 338
77. Chemistry of Uranium in Glass-Forming Melts: Redox Interactions of Uranium with Chromium and Iron in Aluminosilicates ☆ Henry D. Schreiber, G. Bryan Balazs, and Samuel J. Kozak 340
78. Liquid Immiscibility in the Systems X_2O-MO-B_2O_3-SiO_2 (X = Na, K; M = Mg, Ca, Ba) and Na_2O-MgO-BaO-B_2O_3-SiO_2 ☆ Peter Taylor, Allan B. Campbell, and Derrek G. Owen 347
79. Electrical Conduction in Sintered α-Sb_2O_4 ☆ Masaru Miyayama, Shuya Ogi, and Hiroaki Yanagida 351
80. Thermodynamic Measurements and Modeling of $\langle UC_{1-x}O_x \rangle$ ☆ Theodore M. Besmann 353
81. Influence of Thermal Decomposition on the Mechanical Properties of Magnesia-Stabilized Cubic Zirconia ☆ Michael V. Swain, Ronald C. Garvie, and Richard H. J. Hannink 358
82. Dielectric, Electromechanical, Optical, and Mechanical Properties of Lanthanum-Modified Lead Titanate Ceramics ☆ T. Yamamoto, Hideji Igarashi, and Kiyoshi Okazaki 363
83. Empirical Dependence of Elastic Moduli on Porosity for Ceramic Materials ☆ E. A. Dean and J. A. Lopez 366

84. Numerical Fracture Analysis of Chevron-Notched Specimens: I, Shear Correction Factor, k ☆ Mototsugu Sakai and Kouzou Yamasaki 371
85. Numerical Fracture Analysis of Chevron-Notched Specimens: II, Stability Condition for Crack Growth ☆ Mototsugu Sakai and Kouzou Yamasaki 376
86. Relations Between Normal Boiling Point and Melting Point for Simple Halides and Oxides ☆ L. G. Van Uitert 380
87. Effect of Particle Size on the Kinetics of the Reaction Between Magnesium and Aluminum Oxides ☆ Julius Beretka and Trevor Brown 383
Correction — Formation of Ultrafine Tetragonal ZrO_2 Powder Under Hydrothermal Conditions ☆ Eiji Tani, Masahiro Yoshimura, and Shigeyuki Sōmiya 388

***Communications*, pp. C-75–C-92**

Thermal Conductivity of Silicate and Borate Glasses ☆ Mohamed M. Ammar, Sayed A. Gharib, Madiha M. Halawa, Hatem A. El-Batal, and Khairy El-Badry C-76
Synthesis of TiB_2 by High-Dose Implantation of Boron Ions in Titanium Films ☆ Shoichi Okamoto, Akira Kawai, Kenkichiro Kobayashi, Masasuke Takata, Tsutomu Yamashita, and Shiro Yamashita C-78
Fundamentals of Preparing Suspensions of Silicon and Related Ceramic Powders ☆ Alan Bleier C-79
Effects of Microsilica (Silica Fume) on Pore-Solution Chemistry of Cement Pastes ☆ Sidney Diamond C-82
Effect of Fiber Drawing Tension on Optical and Mechanical Properties of Optical Fiber Waveguides ☆ Paul S. Oh, John J. McAlarney, and Dilip K. Nath C-84
Orthosilicate Analyses: A Measure of Hydration in Pastes of Alite and Portland Cement ☆ Zhao-qi Wu, Joe Hriljac, Chao-Lung Hwang, and J. Francis Young C-86
Application of Electrical Analog in Composite Plates ☆ Anil V. Virkar C-87
Effect of Surface Saturation on Transfer of Water in Saturated Ceramic Bodies ☆ Pavel Hrma C-89
Effect of MgO Solute on the Kinetics of Grain Growth in Al_2O_3 ☆ Stephen J. Bennison and Martin P. Harmer C-90

June [6]

***Journal*, pp. 389–474**

88. Immobilization of Radioactive Cesium in Pyrolytic-Carbon-Coated Zeolite ☆ David P. Stinton, W. J. Lackey, and Peter Angelini 389
89. Comparison of Diffusion Data and of Activation Energies ☆ T. Dosdale and R. J. Brook 392
90. Processing-Related Fracture Origins: I, Observations in Sintered and Isostatically Hot-Pressed Al_2O_3/ZrO_2 Composites ☆ F. F. Lange 396
91. Processing-Related Fracture Origins: II, Agglomerate Motion and Cracklike Internal Surfaces Caused by Differential Sintering ☆ F. F. Lange and M. Metcalf 398
92. Processing-Related Fracture Origins: III, Differential Sintering of ZrO_2 Agglomerates in Al_2O_3/ZrO_2 Composite ☆ F. F. Lange, B. I. Davis, and I. A. Aksay 407
93. Effect of Silver Doping on the Physical and Electrical Properties of PLZT Ceramics ☆ Galeb H. Maher 408
94. Properties and Structures of RO-GeO_2 Glasses ☆ J. E. Shelby 414
95. Chemical Durability of Savannah River Plant Waste Glass as a Function of Waste Loading ☆ W. Duncan Rankin and George G. Wicks 417
96. $Ba(Zn_{1/3}Ta_{2/3})O_3$ Ceramics with Low Dielectric Loss at Microwave Frequencies ☆ Syunichiro Kawashima, Masamitsu Nishida, Ichiro Ueda, and Hiromu Ouchi 421
97. Raman Spectral Characterization of Silicon Carbide Nuclear Fuel Coatings ☆ P. Krautwasser, G. M. Begun, and Peter Angelini 424
98. Optical Absorption Characteristics of Ni^{2+} in Mixed-Alkali Borate Glasses ☆ A. A. Ahmed and A. F. Abbas 434
99. Thermophoretic Deposition of Particles in Laminar Flow in a Concentric Annulus ☆ Michael C. Weinberg 439
100. Investigation of Twin Lamellae in $BaTiO_3$ Ceramics ☆ H. Oppolzer and H. Schmelz 444
101. Gamma-Ray Interaction with Lead Borate and Lead Silicate Glasses Containing Manganese ☆ N. A. Ghoneim, F. A. Moustaffa, A. H. Zahran, and F. M. Ezz El Din 447
102. Spinodal Decomposition in Ionic Compounds ☆ Anil V. Virkar and Mark R. Plichta 451
103. Experimental Assessment of Pore Breakaway During Sintering ☆ Metin Sakarcan, C. H. Hsueh, and Anthony G. Evans 456
104. Dissolution of a Nuclear Waste Ceramic: An Experimental and Modeling Study ☆ F. J. Ryerson, F. Bazan, and J. H. Campbell 462
105. Hydrothermal Reaction and Dissolution Studies of $CsAlSi_5O_{12}$ in Water and Brines ☆ Sridhar Komarneni and Rustum Roy 471

***Communications*, pp. C-93–C-102**

Intergranular Crack-Deflection Toughening in Silicon Carbide ☆ K. T. Faber and Anthony G. Evans C-94
Formation of α-Si_3N_4 Solid Solutions in the System Si_3N_4-AlN-Y_2O_3 ☆ Zhen-Kun Huang, Peter Greil, and Günter Petzow C-96
Compressive Creep and Oxidation Resistance of an Si_3N_4 Material Fabricated in the System Si_3N_4-Si_2N_2O-Y_2Si_2O ☆ F. F. Lange, B. I. Davis, and Henry C. Graham C-98
Preparation and Properties of Iron-Magnesium-Aluminum Spinel ☆ David D. Marchant and J. Lambert Bates C-99

July [7]

***Journal*, pp. 475–538**

106. Three Crystalline Polymorphs of $KFeSiO_4$, Potassium Ferrisilicate ☆ Janet J. Bentzen 475
107. Crystal Chemistry and Phase Relations in the System Li_2O-Fe_2O_3-TiO_2 ☆ Yu-Chyi Yau and John M. Hughes 479

108. Surface Morphologies of Magnesium Vanadium Oxide, $Mg_{2-x}V_{1+x}O_4$ ☆ Hirotoshi Oshima 482
109. Slow Crack Growth Behavior in Transformation-Toughened Al_2O_3-$ZrO_2(Y_2O_3)$ Ceramics ☆ Paul F. Becher 485
110. Milling and Suspension Behavior of Al_2O_3 in Methanol and Methyl Isobutyl Ketone ☆ Michael D. Sacks and Chandrashekhar S. Khadilkar 488
111. Thermochemistry of the Aluminas and Aluminum Trihalides ☆ Stephen C. Carniglia 495
112. Dynamic Fatigue of a Machinable Glass-Ceramic ☆ Kathrine K. Smyth and Matthew B. Magida 500
113. Revised Phase Diagram of the System ZrO_2-CeO_2 Below 1400°C ☆ Eiji Tani, Masahiro Yoshimura, and Shigeyuki Sōmiya 506
114. Low-Temperature Dielectric Properties of Ceramic Potassium Tantalate ($KTaO_3$) ☆ Z. X. Chen, X. L. Zhang, and L. E. Cross 511
115. Relation Between Multiregion Crack Growth and Dynamic Fatigue of Glass Using Indentation Flaws ☆ P. Chantikul, Brian R. Lawn, Herbert Richter, and Stephen W. Freiman 515
116. Criteria for Physical Modeling of Electric Glassmelting Furnaces ☆ Pavel Hrma 519
117. X-Ray Scattering Studies of Glasses in the System ZrF_4-BaF_2 ☆ Réjane Coupé, Daniel Loüer, Jacques Lucas, and André J. Léonard 523
118. Mechanical, Thermal, and Microstructural Properties of Neutron-Irradiated SiC ☆ J. C. Corelli, J. Hoole, J. Lazzaro, and C. W. Lee 529
Correction—Flaws Responsible for Slow Cracking in the Delayed Fracture of Alumina ☆ George Sines and Tatsuo Okada 538

***Communications*, pp. C-103–C-118**

Solid Solubility of GeO_2 in SnO_2 ☆ Akiteru Watanabe, Takeshi Kikuchi, Masayuki Tsutsumi, Satoshi Takenouchi, and Kenji Uchida C-104
EPR Evidence for an Osmotic Mechanism of Cement Hydration ☆ Danilo D. Lasič C-106
Precipitation of $Mg_2Zr_5O_{12}$ in MgO-Partially-Stabilized ZrO_2 ☆ Serene C. Farmer, Larry H. Schoenlein, and A. H. Heuer C-107
Preparation of Mn-Zn Ferrites Having a Low Temperature Coefficient of Permeability ☆ Patrick K. Gallagher, E. Michael Gyorgy, David W. Johnson, Jr., Murray Robbins, and Eva M. Vogel C-110
Beta SiC Powders Produced by Carbothermic Reduction of Silica in a High-Temperature Rotary Furnace ☆ George Chia-tsing Wei C-111
Effect of Chemical Composition on the Sinterability of Ultrafine SiC Powders ☆ Junichi Hojo, Kenji Miyachi, Yasuzo Okabe, and Akio Kato C-114
A Radioactive Tracer Method for Measuring the Relative Surface Areas of Small Samples ☆ Sherman D. Brown, Tran Bao Van, and Gerald P. Wirtz C-115
New Method for Solid-State Bonding Between Ceramics and Metals ☆ Katsuaki Suganuma, Taira Okamoto, Masahiko Shimada, and Mitsue Koizumi C-117

August [8]

***Journal*, pp. 539–604**

119. High-Resolution Electron Microscopy of Chemically Vapor-Deposited β-Si_3N_4-TiN Composites ☆ K. Hiraga, M. Hirabayashi, S. Hayashi, and T. Hirai 539
120. Statistical Study of Thermal Shock Damage of a Borosilicate Glass ☆ M. Ashizuka, T. E. Easler, and R. C. Bradt 542
121. Thermodynamic Calculations for the Chemical Vapor Deposition of Silicon Nitride ☆ Angus I. Kingon, Leonard J. Lutz, and Robert F. Davis 551
122. Thermodynamic Calculations for the Chemical Vapor Deposition of Silicon Carbide ☆ Angus I. Kingon, Leonard J. Lutz, P. Liaw, and Robert F. Davis 558
123. Precipitation and Solid Solubility in the System NiO-Cr_2O_3 ☆ Ching-Hwa Chen, Michael R. Notis, and David B. Williams 566
124. Corrosion of a Borosilicate Glass by Orthophosphoric Acid ☆ Helen V. Walters 572
125. A Model for Optimizing Glass Batch Compositions ☆ Tapio Westerlund, Leena Hatakka, and Kaj H. Karlsson 574
126. Measurement of Dynamic Hardness by Controlled Sharp-Projectile Impact ☆ David B. Marshall, Anthony G. Evans, and Z. Nisenholz 580
127. Electrical Conduction in β-Bi_2O_3 Doped with Sb_2O_3 ☆ Masaru Miyayama, Shinichi Katsuta, Yoshihiro Suenaga, and Hiroaki Yanagida 585
128. Measurement and Interpretation of Thermopower in Oxides ☆ A. Trestman-Matts, S. E. Dorris, and Thomas O. Mason 589
129. Mechanical Properties of Fine-Grained Substoichiometric Titanium Carbide ☆ Daniel B. Miracle and Harry A. Lipsitt 592
130. Preparation of $Bi_4Ti_3O_{12}$ Powders in the Presence of Molten Salt Containing LiCl ☆ Toshio Kimura, Takanobu Kanazawa, and Takashi Yamaguchi 597
131. Evaluation of the Fatigue Constant n in Optical Fibers with Surface Particle Damage ☆ F. A. Donaghy and D. R. Nicol 601

***Communications*, pp. C-119–C-148**

Strength Retention in SiC Ceramics after Long-Term Oxidation ☆ Paul F. Becher C-120
Properties of Glasses in the System AgI-Ag_2O-B_2O_3 ☆ Günther H. Frischat, Sabine Speyer, and Wolfgang Wegener C-122
Fluorine Treatments of Soda-Lime Silicate Glass Surfaces ☆ Richard K. Brow and William C. LaCourse C-123
Microstructure of Sintered Mullite-Zirconia Composites ☆ Svante Prochazka, Jay S. Wallace, and Nils Claussen C-125
Phase Transitions and Thermoluminescence of a Plasma-Sprayed Zinc Silicate Phosphor ☆ Takeshi Takamori, Derek B. Dove, and Coy L. Huffine C-127

Effect of Surface Condition on Oxygen Self-Diffusion Coefficients for Single-Crystal Al_2O_3 ☆ Yasumichi Oishi, Ken Ando, Nobuhiko Suga, and W. David Kingery C-130
Effect of Ratio of Surface Area to Volume on Oxygen Self-Diffusion Coefficients Determined for Crushed MgO-Al_2O_3 Spinels ☆ Ken Ando and Yasumichi Oishi C-131
Surface Crystallization of a Fluoride Glass ☆ Narottam P. Bansal and Robert H. Doremus C-132
Effect of Trace Impurity Levels on the Viscosity of Vitreous Silica ☆ Peter P. Bihuniak, Andrew Calabrese, and Emmett M. Erwin C-134
Diffusional Reaction-Bonding of Si_3N_4 Ceramics Under High Pressure ☆ Takahiro Kaba, Masahiko Shimada, and Mitsue Koizumi C-135
Detection of Thin Intergranular Cobalt Layers in WC-Co Composites by Lattice Imaging ☆ Vikram Jayaram and Robert Sinclair C-137
Characterization of Insoluble Layers Formed by NaOH Attack on the Surface of a ZrO_2-Containing Silicate Glass ☆ Akio Makishima, Masayuki Tsutsumi, Takajiro Shimohira, and Tatsuya Nagata C-139
Influence of Boron on Chemical Interdiffusion in SiC During Conversion of Silicon Fibers to SiC ☆ Kilian M. Friederich and Robert L. Coble C-141
Preparation and Melting Point of Octalithium Zirconate ☆ Mark S. Ortman and Edwin M. Larsen C-142
Enhanced Oxygen Diffusion at 1400°C in Deformed Single-Crystal Magnesium Oxide ☆ Anders F. Henriksen, Yet-Ming Chiang, W. David Kingery, and William T. Petuskey C-144
Characterization of Creep Cavitation in Sintered Alumina by Small-Angle Neutron Scattering ☆ Richard A. Page and James Lankford C-146

September [9]

***Journal*, pp. 605–672**

132. Finite Difference Numerical Analysis of Phase-Boundary Reaction Models for Cesium Penetration Into Glass ☆ R. P. Freuholz and M. Wun-Fogle 605
133. Structural Characterization of the Spinel Phase in the Kaolin-Mullite Reaction Series Through Lattice Energy ☆ S. Mazumdar and B. Mukherjee 610
134. Sub-Sub-T_g Enthalpy Relaxation in a B_2O_3 Glass ☆ H. S. Chen and C. R. Kurkjian 613
135. Chemical Analysis of Bi-Containing Magnetic Bubble Garnet Films ☆ L. C. Luther and T. Y. Kometani 619
136. Factors Influencing Residual Surface Stresses due to a Stress-Induced Phase Transformation ☆ David J. Green, F. F. Lange, and Michael R. James 623
137. Microstructure and Mineral Chemistry of Synroc-D ☆ F. J. Ryerson 629
138. The Influence of Piezoelectric Grain Resonance on the Dielectric Spectra of $LiNbO_3$ Ceramics ☆ Yao Xi, H. McKinstry, and L. E. Cross 637
139. Fracture Behavior of the Space Shuttle Thermal Protection System ☆ Atsutomo Komine and Albert S. Kobayashi 641
140. Preparation, Characterization, and Melting Point of High-Purity Lithium Oxide ☆ Mark S. Ortman and Edwin M. Larsen 645
141. Solid Solution Range and Microstructures of Melt-Grown Mullite ☆ W. M. Kriven and Joseph A. Pask 649
142. Compaction of Aggregated Alumina Powder ☆ F. W. Dynys and J. W. Halloran 655
143. Lithium Carbonate/Sodium Sulfate Eutectic—An Additive for Improving Glass Production ☆ Patrick M. Brown and Daniel A. Boryta 660
144. Oxygen Diffusion in MgO and α-Fe_2O_3 ☆ K. P. R. Reddy and A. R. Cooper 664
145. Stress Transmission During the Compaction of a Spray-Dried Alumina Powder in a Steel Die ☆ Robert A. DiMilia and James S. Reed 667

***Communications*, pp. C-149–C-176**

Effect of Initial Grain Size on Fission Gas Release from Irradiated UO_2 Fuel ☆ Ian J. Hastings C-150
Strength and Fatigue of Fluoride Glass Optical Fibers ☆ Shigeki Sakaguchi and Seiko Mitachi C-151
CO_2 Retention in High-Alkali Borate Glasses ☆ Steve W. Martin, Emanuel I. Cooper, and C. Austen Angell C-153
Growth of Beta Alumina on Aluminum Oxide ☆ James D. Hodge C-154
Inhomogeneous Density in Die Compaction: Experiments and Finite-Element Calculations ☆ Arnold Broese van Groenou and Rokus C. D. Lissenburg C-156
Effect of Gamma Irradiation on Simulated Waste Glass Leaching and on the Leach Vessel ☆ Denis M. Strachan C-158
Twinning Shear in Alumina ☆ William D. Scott C-161
Crystallography of the Directionally Solidified NiO-CaO Eutectic ☆ Marc Fragneau and Alexandre Revcolevschi C-162
Grain-Boundary Resistivity of Stabilized Zirconia Films ☆ Masaru Miyayama, Hiroyuki Inoue, and Hiroaki Yanagida C-164
Use of Autocorrelation Analysis in the Evaluation of Piezoelectric Coupling of Modified PLZT Ceramics Subjected to High Electric Fields ☆ Irina Jemna, E. Luca, P. Nicolau, C. Tanasoiu, and C. Ioan C-166
Plasma Etching of Sialon ☆ Chris Chatfield and Hans Norström C-168
Preparation and Thermal Behavior of Magnesium-Germanium Hydroxide ☆ Osamu Yamaguchi, Hiroshi Matumoto, Shinichi Morikawa, and Kiyoshi Shimizu C-169
Spinodal Decomposition in a K_2O-Al_2O_3-CaO-SiO_2 Glass ☆ Yet-Ming Chiang and W. David Kingery C-171
Properties of Isostatically Hot-Pressed Silicon Nitride ☆ David W. Richerson and James M. Wimmer C-173

October [10]

***Journal*, pp. 673–746**

146. Effect of Crystallites on Surface Damage and Fracture Behavior of a Glass-Ceramic ☆ R. Morena, K. Niihara, and D. P. H. Hasselman 673

147. Preparation of High-Silica Glasses from Colloidal Gels: I, Preparation for Sintering and Properties of Sintered Glasses ☆ E. M. Rabinovich, D. W. Johnson, Jr., J. B. MacChesney, and E. M. Vogel 683
148. Preparation of High-Silica Glasses from Colloidal Gels: II, Sintering ☆ D. W. Johnson, Jr., E. M. Rabinovich, J. B. MacChesney, and E. M. Vogel 688
149. Preparation of High-Silica Glasses from Colloidal Gels: III, Infrared Spectrophotometric Studies ☆ D. L. Wood, E. M. Rabinovich, D. W. Johnson, Jr., J. B. MacChesney, and E. M. Vogel 693
150. Mechanical Properties of Mullite ☆ Tai-il Mah and K. S. Mazdiyasni 699
151. Electrical Conductivity of TiO_2-V_2O_5-P_2O_5 Glasses ☆ Hiroshi Hirashima, Kota Nishii, and Tetsuro Yoshida 704
152. Analysis of Thermal Stress Failure of Segmented Thick-Walled Refractory Structures ☆ W. S. Chang, C. E. Knight, D. P. H. Hasselman, and R. G. Mitchiner 708
153. Determination of the Si Diffusing Unit in the System Na_2O-CaO-SiO_2 Using a Multiatomic Ion Model ☆ M. Nanba and Y. Oishi 714
154. Durability and Properties in Alkali Aluminofluorophosphate Glasses ☆ Paul A. Tick 716
155. Crack Coalescence and Microscopic Crack Growth in the Delayed Fracture of Alumina ☆ Tatsuo Okada and George Sines 719
156. Critical Grain Size/Preexisting Flaw Size Relations in Anisotropic Brittle Solids ☆ Vladimir D. Krstic 726
157. Oxidation-Reduction and the Major Type of Ionic Disorder in α-Al_2O_3 ☆ F. A. Kröger 730
158. Reaction of Anatase and Rutile with Barium Carbonate ☆ Ahmed Amin, Marlene A. Spears, and Bernard M. Kulwicki 733
159. Effect of Decomposition on the Densification and Properties of Nasicon Ceramic Electrolytes ☆ B. J. McEntire, R. A. Bartlett, G. R. Miller, and R. S. Gordon 738
160. Characterization and Sintering of Lead Zirconate-Titanate Powders ☆ S. H. Cho and James V. Biggers 743

***Communications*, pp. C-177–C-198**

A Technique for Introducing Surface Compression into Zirconia Ceramics ☆ David J. Green C-178
Oxygen Potential of $U_{0.85}Zr_{0.15}O_{2+x}$ Solid Solutions at 1500°C ☆ Katsumi Une and Masaomi Oguma C-179
Crack Resistance Behavior of Ceramic Materials ☆ Herbert Wieninger and Reiner Friedrich Pabst C-181
Identification of $BaO{\cdot}Al_2O_3{\cdot}5TiO_2$ in the Ternary System $BaO{\cdot}Al_2O_3$-TiO_2 ☆ Ahmed G. Solomah, Reinhard Odoj, and Christoph Freiburg C-182
Velocity Exponent in Solid-Particle Erosion of Silicon ☆ Ronald O. Scattergood and Jules L. Routbort C-184
Phase Relations in the System Li_2O-ZrO_2-SiO_2 ☆ Clayton F. Gardinier and Luke L. Y. Chang C-186
Effect of Trace Impurities on Devitrification of Vitreous Silica ☆ Peter P. Bihuniak C-188
Uniformity of Al_2O_3-ZrO_2 Composites by Colloidal Filtration ☆ I. A. Aksay, F. F. Lange, and B. I. Davis C-190
Photochemical Reaction in a Reduced Soda-Lime-Silica Glass Containing Ce^{3+} and As^{3+} ☆ Hideo Hosono, Yoshihiro Abe, Hiroshi Kawazoe, and Hiroshi Imagawa C-192
Effect of Drop Height on Critical Temperature Difference (ΔT_c) for Brittle Ceramics Subjected to Thermal Shock by Quenching into Water ☆ Jitendra P. Singh, D. P. H. Hasselman, and Günther Ziegler C-194
Products of Reaction Between PbO and Nb_2O_5 in Molten KCl or NaCl ☆ Toshio Kimura, Masataka Machida, Takashi Yamaguchi, and Robert E. Newnham C-195
Magnesium Titanate Spinel: A Ceramic Phase for Immobilization of Technetium-99 from Radioactive Wastes ☆ M. Yasser Khalil and William B. White C-197

November [11]

***Journal*, pp. 747–822**

161. The Nonconformist Ion ☆ F. M. Ernsberger 747
162. Stability of Ultrafine Tetragonal ZrO_2 Coprecipitated with Al_2O_3 by the Spray-ICP Technique ☆ M. Kagawa, M. Kikuchi, Y. Syono, and T. Nagae 751
163. Property/Morphology Relations in Alkali Silicate Glasses ☆ J. E. Shelby 754
164. Oxynitride Glass Formation from Gels ☆ C. J. Brinker and D. M. Haaland 758
165. Use of Weibull Statistics to Correlate MOR, Ball-on-Ring, and Rotational Fast Fracture Tests ☆ Robert M. Williams and Lewis R. Swank 765
166. Static Fatigue Limit for Sintered Silicon Carbide at Elevated Temperatures ☆ E. J. Minford, D. M. Kupp, and R. E. Tressler 769
167. Effect of Reducing Atmosphere on Minerals and Iron Oxides Developed in Fired Clays: The Role of Ca ☆ Y. Maniatis, A. Simopoulos, A. Kostikas, and V. Perdikatsis 773
168. Assessment of the Thermodynamic Values for $\langle PuO_{1.5}\rangle$ and High-Temperature Determination of the Values for $\langle PuC_{1.5}\rangle$ ☆ Theodore M. Besmann and Terrence B. Lindemer 782
169. Elastic Recovery at Static Loading and Impact Indentations in MgF_2 ☆ H. P. Kirchner, J. A. Tiracorda, and T. J. Larchuk 786
170. Reaction Sequence in the Formation of Lead Zirconate-Lead Titanate Solid Solution: Role of Raw Materials ☆ B. V. Hiremath, Angus I. Kingon, and James V. Biggers 790
171. Inverse Spinel Pigments ☆ Richard A. Eppler 794
172. Barium Titanate Perovskite Sintered with Lithium Fluoride ☆ J. M. Haussonne, G. Desgardin, Ph. Bajolet, and B. Raveau 801
173. Compressive Surface Strengthening of Brittle Materials by a Residual Stress Distribution ☆ David J. Green 807
174. Mechanism and Kinetics of Reactions in the System Ni-Ti-O ☆ Dov B. Goldman 811
175. Particle Size Distribution and Its Relation to Sintering—A Case Study for UO_2 Powders ☆ R. C. Burk, T. W. Zawidzki, and P. S. Apté 815
176. Reaction Kinetics in the Hydrothermal Oxidation of Hf ☆ Hideo Toraya, Masahiro Yoshimura, and Shigeyuki Sōmiya 818

***Communications*, pp. C-199–C-218**

A Modified Indentation Toughness Technique ☆ Robert F. Cook and Brian R. Lawn C-200

Cation Self-Diffusion in Cr_2O_3 ☆ Kazutomo Hoshino and N. L. Peterson C-202
Fracture Toughness Anisotropy of Sodium β-Alumina ☆ David C. Hitchcock and Lutgard C. De Jonghe C-204
Precursor Powders for Sulfide Ceramics Prepared by Evaporative Decomposition of Solutions ☆ Daniel L. Chess, Catherine A. Chess, and William B. White C-205
Synthesis of Metal Phosphates Using SiP_2O_7 ☆ Carlos E. Bamberger, George M. Begun, and Dale E. Heatherly C-208
Preparation of Rapidly Quenched Glasses in Pseudobinary Systems Composed of Lithium Ortho-Oxosalts ☆ Masahiro Tatsumisago, Hiroshi Narita, Tsutomu Minami, and Masami Tanaka C-210
Plastic Deformation of Partially Stabilized Zirconia ☆ James Lankford C-212
PTCR Characteristics in Barium Titanate Ceramics with Curie Points Between 60° and 360°C ☆ Makoto Kuwabara and Kenji Kumamoto C-214
Removal of Oxide Contamination from TiB_2 Powders ☆ Jorulf Brynestad, Carlos E. Bamberger, J. Fred Land, and Cabell B. Finch C-215
Comment on "Comparison of Diffusion Data and of Activation Energies" ☆ James D. Hodge C-216
Reply ☆ T. Dosdale and R. J. Brook C-217
Comment on "Kinetics of Crystallization of ZrF_4-BaF_2-LaF_3 Glass by Differential Scanning Calorimetry" ☆ T. B. Tang and M. M. Chaudhri C-218
Reply ☆ Narottam P. Bansal, Robert H. Doremus, Allen J. Bruce, and Cornelius T. Moynihan C-218

December [12]

***Journal*, pp. 823–898**

177. Linear Thermal Expansion Coefficients of Mullite-Matrix Aluminosilicate Refractory Bodies ☆ I. Peretz and R. C. Bradt 823
178. Thermoelectric Determination of Cation Distributions in Fe_3O_4-Fe_2TiO_4 ☆ A. Trestman-Matts, S. E. Dorris, S. Kumarakrishnan, and T. O. Mason 829
179. Characteristics of Si_3N_4-SiO_2-Ce_2O_3 Compositions Sintered in High-Pressure Nitrogen ☆ William A. Sanders and Thomas P. Herbell 835
180. Liquid-Phase Sintering of TiC-Ni Composites ☆ Daniel J. Miller and Joseph A. Pask 841
181. Elastic Moduli of Porous Sintered Materials as Modeled by a Variable-Aspect-Ratio Self-Consistent Oblate-Spheroidal-Inclusion Theory ☆ E. A. Dean 847
182. Microwave Clinkering with a Grooved Resonant Applicator ☆ L. Quéméneur, J. Choisnet, B. Raveau, J. M. Thiebaut, and G. Roussy 855
183. Phase Equilibria in the Systems Rare-Earth Sesquioxide-Beryllium Oxide ☆ Tung-sheng Yen, Chu-kun Kuo, Wen-long Han, Ying-hui Qui, and Yu-zhen Huang 860
184. Influence of Gamma Irradiation on Leaching of Simulated Nuclear Waste Glass: Temperature and Dose Rate Dependence in Deaerated Water ☆ L. R. Pederson and G. L. McVay 863
185. Energy Principle of Elastic-Plastic Fracture and Its Application to the Fracture Mechanics of a Polycrystalline Graphite ☆ Mototsugu Sakai, Kazuhiro Urashima, and Michio Inagaki 868
186. Infrared-Transparent Mullite Ceramic ☆ S. Prochazka and F. J. Klug 874
187. Fabrication of Grain-Oriented $PbBi_2Nb_2O_9$ ☆ Sheng-he Lin, S. L. Swartz, W. A. Schulze, and J. V. Biggers 881
188. Structural Reliability of Yttria-Doped Hot-Pressed Silicon Nitride at Elevated Temperatures ☆ S. M. Wiederhorn and N. J. Tighe 884
189. Structure and Properties of Rapidly Quenched Li_2O-Al_2O_3-Nb_2O_5 Glasses ☆ Masahiro Tatsumisago, Akira Hamada, Tsutomu Minami, and Masami Tanaka 890
190. Rearrangement of Porous CaO Aggregates During Calcite Decomposition in Vacuum ☆ Dario Beruto, Luigi Barco, and Alan W. Searcy 893
191. Behavior of Glass Fibers in Strong Acidic and Alkaline Media ☆ Ilona Wojnarovits 896
Correction — Effect of Decomposition on the Densification and Properties of Nasicon Ceramic Electrolytes ☆ B. J. McEntire, R. A. Bartlett, G. R. Miller, and R. S. Gordon 898

***Communications*, pp. C-219–C-230**

Estimation of Thermochemical Data for Calcium Silicate Hydrate (C-S-H) ☆ Kinjiro Fujii and Wakichi Kondo C-220
Oxygen Self-Diffusion in Single-Crystal Y_2O_3 ☆ Ken Ando, Yasumichi Oishi, Hiroyuki Hase, and Koichi Kitazawa C-222
Sphere-on-Tape Method of Rapid Selected-Area Thinning of Samples for Transmission Electron Microscopy ☆ Arnold Broese van Groenou and Dénis J. C. van Oers C-223
Identification of α-Al_2O_3 Precipitates in Rutile Single Crystals ☆ Ngo Thong, Claude Carry, and Pedro Moeckli C-225
Melting Reactions of Soda-Lime-Silicate Glasses Containing Sodium Sulfate ☆ Theodore D. Taylor and Kurt C. Rowan C-227
Properties of Glass/Alumina Composites ☆ Paige L. Higby and James E. Shelby C-229